

efficient work. For small home orchards a barrel hand pump will answer the purpose. For orchards of one to eight acres a double-acting hand pump which gives a pressure of from one hundred to one hundred and twenty-five pounds may prove satisfactory. Over eight acres, a power outfit is almost a necessity.

We have had the management of four demonstration orchards in the counties of Northumberland and Durham during the past two years, and it might not be amiss to get our methods. Our spray outfit consisted of a double-acting hand pump mounted on a waggon—not on a stone-boat—with a tower equipment for reaching tall trees.

Our tank was a home-made affair, holding two hundred gallons. We used two lines of hose with two angle nozzles of the "friend" type on each line of hose. One man was on the tower equipped with fifteen feet of hose and a rod eight feet long; the other man being on the ground with thirty feet of hose and a ten foot bamboo rod. Two men acted as power on the pump—giving a pressure of one hundred to one hundred and fifty pounds. All solutions were strained into the tank. The arsenate of lead was first brought into suspension before being strained into the spray tank. We always endeavored to spray with the wind and to do as much of the tree as possible. One side of the tree was sprayed as it was approached; we then drove directly opposite and sprayed the central parts thoroughly; then we completed the other side at the third stop. Medium-sized trees were sprayed by stopping twice. We aimed to cover every portion of the tree though not wasting any material. For the spray after the blossoms fell we tried to do most thorough work. Our object was to fill every calyx cup. Ninety per cent. of the codling worms enter the apple in the calyx end, hence it is important to have the poison placed where it will do most effective work.

We sprayed each orchard three times, using five to eight gallons of mixture on each tree for each spraying. We always cleaned our pump, hose, and nozzles by running clean water through them. Never leave liquid in pump overnight, because there is danger of freezing in cold weather and clogging up the nozzles. This point is worth remembering, as it very often is the cause of much delay and annoyance.

Each fruit grower who uses lime-sulphur should have a hydrometer in order to test the solution and know how many gallons of water should be added to each gallon of lime-sulphur. Instructions are given in the spray calendar, which can be had for the asking.



Methods of Pruning—The Open-centre Habit of Apple Trees

Points to Watch When Ordering Nursery Stock

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I find that a great many planters value a tree according to its size. In my opinion, this is an error. Expert peach growers always refuse the largest trees, choosing rather one of medium height, or slightly above, and moderately stocky. In apples I think the same rule would hold good.

In a well grown block of stock, the large trees are not necessarily the best, and the statement is even more true in plums and cherries than in apples. It is much to be desired that our planters shall become acquainted with the advantages of younger trees. This is most important in the case of cherries and plums, as stone fruits are more difficult to transplant successfully, and younger trees can be more safely moved than those of two years of age or older. In ordering one year trees, one should specify trees not less than three and a half feet in height and at least moderately stocky for the size. I observe, too, that very many planters are unable to tell the age of a nursery tree. This is not usually a difficult matter, however, as the annual growths are for the most part plainly indicated on the tree itself and are readily observed.

ADVANTAGE OF YOUNG TREES

One of the chief advantages in the use of younger trees is the fact that a tree procured from the nursery as an unbranched whip can be headed at any desired height by the fruit grower and can be shaped by him so as to make a tree of better form than the ordinary two year old tree as received from the nurseries. The advantages of low-heading are many, and are for the most

part obvious. The disadvantages are not nearly so great as one would expect, for the reason that a low-headed tree tends to grow more upright, and cultivation is not interfered with nearly so much as one would expect.

Weeds and grass do not grow under low-headed trees to the same extent as under high-headed trees, and shade furnished by the tree itself also reduces somewhat the necessity for cultivation under the tree. With trees headed to fifteen inches or less, there is very little necessity for cultivating within two or three feet of the trunk. Anything required in that area can be done by hand at small expense. It is obvious that a tree with a fifteen-inch trunk is much more convenient to spray, prune, pick and thin than one with a longer trunk.

THE STOCK TO BUY

In selecting nursery stock, one should have these points in mind and should endeavor to buy low-headed trees or buy trees which can be headed low if desired. Transportation charges on the younger trees are less, and in moderate quantities at least they could be forwarded by express with much less danger of delay and consequent injury.

In purchasing trees, it is always wise to see the stock beforehand, if at all possible. In case one can deal through an agent whose reliability is unquestioned, it would be satisfactory to order through him, but if not, the best plan would be for a number of growers in a district to club together and send one man to purchase stock for the entire number.